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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/619,371	07/19/2000	Patrick J. Treado	000537	2198

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EXAMINER	
AMARI, ALESSANDRO V	
ART UNIT	**PAPER NUMBER**
2872	

DATE MAILED: 12/07/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/619,371	TREADO ET AL.	
	Examiner	Art Unit	
	Amari, Alessandro V.	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) *26* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25 and 27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-25, 27, drawn to a chemical imaging fiberscope, classified in class 385, subclass 117.

   II. Claim 26, drawn to a method of using a chemical imaging fiberscope, classified in class 600, subclass 300+.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the chemical imaging fiberscope can be used as a visual inspection tool.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mr. Dennis M. Carleton on 19 November 2001 a provisional election was made without traverse to prosecute the invention of the Treado et al., claims 1-25, 27. Affirmation of this election must be made by applicant in replying to this Office action. Claim 26 is withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Information Disclosure Statement

2. The information disclosure statement filed on November 11, 2000 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein ~~has~~ which a copy was not provided have not been considered.

Claim Objections

3. Claim 24 is objected to because of the following informalities:

Regarding claim 24, the phrase "said imaging spectrometer" lacks proper antecedent basis.

Appropriate correction is required.

4. The claims are objected to because the lines are crowded too closely together, making reading and entry of amendments difficult. Substitute claims with lines one and one-half or double spaced on good quality paper are required. See 37 CFR 1.52(b).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

6. Claims 1-9, 18, 19, 21 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Wach et al. U.S. Patent 6,222,970.

In regard to claim 1, Wach et al. discloses (see Figures 27A, 27B and 27C) a chemical imaging fiberscope for imaging and collecting Raman spectra from a sample comprising one or more laser illumination fibers (2710) for transmitting laser light of a specific laser excitation wavelength from a first source to said sample; a plurality of collection fibers (2715), for receiving light scattered from said sample as described in column 28, lines 18-29; a spectral filter positioned between said one or more laser illumination fibers and said sample for transmitting said laser light of a specific laser excitation wavelength and rejecting light of other wavelengths as described in column

53, lines 9-15; and a spectral filter positioned between said sample and said plurality of collection fibers for transmitting wavelengths of light other than said specific laser excitation wavelength as described in column 53, lines 15-24.

In regard to claim 2, Wach et al. discloses that the plurality of collection fibers are arranged in a coherent bundle as described in column 28, lines 18-30 and as shown in Figures 27A and 27C.

In regard to claim 3, Wach et al. discloses that the spectral filters exhibit environmental sensitivity to temperature and humidity as described in column 62, lines 53-67 and column 64, lines 64-67 and column 65, lines 1-23.

In regard to claim 4, Wach et al. discloses (see Figure 2B) one or more lenses positioned between said sample and said plurality of collection fibers as described in column 61, lines 11-25.

In regard to claim 5, Wach et al. discloses (see Figure 27B and 27C) a housing for enclosing the fiberscope as described in column 29, lines 52-53.

In regard to claim 6, Wach et al. discloses a window disposed at the distal end of said fiberscope in column 30, lines 15-18.

In regard to claim 7, Wach et al. discloses that the window is composed of a material selected from a group comprising quartz, diamond and sapphire as described in column 30, lines 15-18.

In regard to claim 8, Wach et al. discloses that the laser spectral filter is spatially patterned into a first portion for filtering said laser light and a second, transparent

portion for transmitting light scattered or reflected by said sample to said plurality of collection fibers as described in column 53, lines 9-22.

In regard to claim 9, Wach et al. discloses that the spectral filters are composed of a filter type selected from a group comprising dielectric, holographic and rugate spectral filters as described in column 72, lines 50-53 and column 81, lines 5-8.

In regard to claim 19, Wach et al. discloses a spatial filter positioned between said sample and said collection fibers for controlling the angular field of view of said collection fibers as described in column 34, lines 58-61.

In regard to claims 18, 21, and 22, Wach et al. discloses (see Figures 27A, 27B and 27C) a chemical imaging fiberscope for imaging and collecting Raman spectra from a sample comprising one or more laser illumination fibers (2710) for transmitting laser light of a specific laser excitation wavelength from a first source to said sample; a plurality of collection fibers (2715) for receiving light scattered from said sample; a spectral filter positioned between said one or more laser illumination fibers and said sample for transmitting said laser light of a specific laser excitation wavelength and rejecting light other wavelengths as described in column 53, lines 9-15; a spectral filter positioned between said sample and said plurality of collection fibers for transmitting wavelengths of light other than said specific laser excitation wavelength as described in column 53, lines 15-24; a spatial filter positioned between said sample and said collection fibers for controlling the angular field of view of said collection fibers as described in column 34, lines 58-61; one or more lenses positioned between said sample and said plurality of collection fibers as described in column 61, lines 11-25; a

housing for enclosing the fiberscope as described in column 29, lines 52-53; and a window disposed at the distal end of said fiberscope as described in column 30, lines 15-18.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 10-17, 20, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wach et al. U.S. Patent 6,222,970 in view of Katoot U.S. Patent 6,091,872.

In regards to claim 10, Wach et al. teaches the invention as set forth above and further teaches that in regard to claim 11, the plurality of collection fibers are arranged in a coherent bundle as described in column 28, lines 18-30 and as shown in Figures 27A and 27C. In regard to claims 12 and 20, Wach et al. teaches that the spectral filters exhibit environmental sensitivity to temperature and humidity as described in column 62, lines 53-67 and column 64, lines 64-67 and column 65, lines 1-23. In regard to claim 13, Wach et al. teaches (see Figure 2B) one or more lenses positioned between said sample and said plurality of collection fibers as described in column 61, lines 11-25. In regard to claim 14, Wach et al. teaches (see Figure 27B and 27C) a housing for enclosing the fiberscope as described in column 29, lines 52-53. In regard to claim 15, Wach et al. teaches a window disposed at the distal end of said fiberscope in column

30, lines 15-18. In regard to claim 16, Wach et al. teaches that the window is composed of a material selected from a group comprising quartz, diamond and sapphire as described in column 30, lines 15-18. In regard to claim 17, Wach et al. teaches that the laser spectral filter is spatially patterned into a first portion for filtering said laser light and a second, transparent portion for transmitting light scattered or reflected by said sample to said plurality of collection fibers as described in column 53, lines 9-22. In regard to claim 27, Wach et al. teaches a spatial filter positioned between said sample and said collection fibers for controlling the angular field of view of said collection fibers as described in column 34, lines 58-61. However in regard to claim 10, Wach et al. lacks a teaching of a plurality of white light illumination fibers for transmitting white light from a second source to said sample. Katoot teaches a teaching of a plurality of white light illumination fibers for transmitting white light from a second source to said sample as described in column 6, lines 50-67 and column 7, lines 1-18. It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the plurality of white light illumination fibers as taught by Katoot in the fiberscope of Wach et al. in order provide capability for viewing objects.

9. Claims 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wach et al. U.S. Patent 6,222,970 in view of Alfano et al. U.S. Patent 6,006,001.

In regard to claim 23, Wach et al. teaches the invention as set forth above but does not teach a mount for holding the fiberscope distal end in proximity to said sample; a link for directing the output of the fiberscope under white light illumination conditions to a live video camera; a link for directing the output under laser illumination conditions to

a Raman spectrometer; a link for directing the output under laser illumination conditions to a Raman chemical imaging spectrometer and detector. Alfano et al. teaches (see Figure 6) a mount (30) for holding the fiberscope distal end in proximity to said sample; a link (73) for directing the output of the fiberscope under white light illumination conditions to a live video camera; a link (52) for directing the output under laser illumination conditions to a Raman spectrometer; a link (52) for directing the output under laser illumination conditions to a Raman chemical imaging spectrometer and detector as described in column 8, lines 19-35. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the fiberscope assembly including video and spectrometer system of Alfano et al. with the fiberscope of Wach et al. in order to provide spectroscopic analysis.

10. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wach et al. U.S. Patent 6,222,970 in view of Cooney et al. "Remote Raman Microimaging Using an AOTF and a Spatially Coherent Microfiber Optical Probe" Applied Spectroscopy, Volume 50, No. 8 (1996).

In regard to claims 24 and 25, Wach et al. teaches the invention as set forth above but does not teach that the imaging spectrometer is of the liquid crystal tunable filter type or software and hardware for producing and displaying a Raman image of a sample. Cooney et al. teaches software and hardware for producing and displaying a Raman image of a sample as shown in Figure 1 and also discloses an imaging spectrometer being of the liquid crystal tunable filter type as described in column 1, lines 25-33. It would have been obvious to one having ordinary skill in the art at the time the

invention was made to utilize the liquid crystal tunable filter spectrometer of Cooney et al. in the fiberscope of Wach et al. in order to allow for acquisition of Raman images.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alessandro V. Amari whose telephone number is (703) 306-0533. The examiner can normally be reached on Monday-Friday from 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on (703) 308-1687. The fax phone numbers for the organization where this application is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

ava AVA
November 23, 2001

C. SPYROU
SPE 2872